

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.

Application Serial Number: 10/069,772B
Source: 1FW1b
Date Processed by STIC: 10/12/06

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IFW16

RAW SEQUENCE LISTING

DATE: 10/12/2006

PATENT APPLICATION: US/10/069,772B

TIME: 14:51:03

Input Set : A:\50669.APP

Output Set: N:\CRF4\10122006\J069772B.raw

3 <110> APPLICANT: FEUSSNER, IVO
 4 HORNUNG, ELLEN
 5 FRITSCH, KATHRIN
 6 PEITZSCH, NICOLA
 7 RENZ, ANDREAS
 9 <120> TITLE OF INVENTION: FATTY ACID DESATURASE GENE FROM PLANTS
 11 <130> FILE REFERENCE: 50669
 13 <140> CURRENT APPLICATION NUMBER: 10/069,772B
 14 <141> CURRENT FILING DATE: 2002-02-28
 16 <150> PRIOR APPLICATION NUMBER: PCT/EP00/08222
 17 <151> PRIOR FILING DATE: 2000-08-23
 19 <150> PRIOR APPLICATION NUMBER: DE 199 41 609.5
 20 <151> PRIOR FILING DATE: 1999-09-01
 22 <160> NUMBER OF SEQ ID NOS: 19
 24 <170> SOFTWARE: PatentIn Ver. 3.3
 26 <210> SEQ ID NO: 1
 27 <211> LENGTH: 1285
 28 <212> TYPE: DNA
 29 <213> ORGANISM: Calendula officinalis
 31 <220> FEATURE:
 32 <221> NAME/KEY: CDS
 33 <222> LOCATION: (42)..(1175)
 35 <400> SEQUENCE: 1
 36 aaaagctcac ttctctgtga gggttaattat atatcaacaa c atg ggt gct ggt ggt 56
 37 Met Gly Ala Gly Gly
 38 1 5
 40 cgg atg tcg gat cca tct gag gga aaa aac atc ctt gaa cgt gtg cca 104
 41 Arg Met Ser Asp Pro Ser Glu Gly Lys Asn Ile Leu Glu Arg Val Pro
 42 10 15 20
 44 gtc gat cca ccg ttc acg tta agc gat ctg aag aaa gcg att cct acc 152
 45 Val Asp Pro Pro Phe Thr Leu Ser Asp Leu Lys Lys Ala Ile Pro Thr
 46 25 30 35
 48 cat tgc ttt gag cga tct gtc atc cgg tca tca tac tat gtt gtt cat 200
 49 His Cys Phe Glu Arg Ser Val Ile Arg Ser Ser Tyr Tyr Val Val His
 50 40 45 50
 52 gat ctc att gtt gcc tat gtc ttc tac tac ctt gca aac acg tat atc 248
 53 Asp Leu Ile Val Ala Tyr Val Phe Tyr Tyr Leu Ala Asn Thr Tyr Ile
 54 55 60 65
 56 cct ctt att cct aca cct ctg gct tac cta gca tgg ccc gtt tac tgg 296
 57 Pro Leu Ile Pro Thr Pro Leu Ala Tyr Leu Ala Trp Pro Val Tyr Trp
 58 70 75 80 85
 60 ttt tgt caa gct agc atc ctc acc ggc ctc tgg gtc atc ggt cac gaa 344
 61 Phe Cys Gln Ala Ser Ile Leu Thr Gly Leu Trp Val Ile Gly His Glu

see p. 6

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62		90		95		100		
64	tgt ggt cac cat gca ttt agc gac tac cag ttg att gat gac att gtt	392						
65	Cys Gly His His Ala Phe Ser Asp Tyr Gln Leu Ile Asp Asp Ile Val							
66		105		110		115		
68	gga ttc gtg ctc cat tcg gct ctc ctc acc ccg tat ttc tct tgg aaa	440						
69	Gly Phe Val Leu His Ser Ala Leu Leu Thr Pro Tyr Phe Ser Trp Lys							
70		120		125		130		
72	tat agc cac agg aat cac cac gcc aac aca aat tca ctc gat aac gat	488						
73	Tyr Ser His Arg Asn His His Ala Asn Thr Asn Ser Leu Asp Asn Asp							
74		135		140		145		
76	gaa gtt tac att cct aaa cgt aag tcg aag gtc aag att tat tcc aaa	536						
77	Glu Val Tyr Ile Pro Lys Arg Lys Ser Lys Val Lys Ile Tyr Ser Lys							
78	150		155		160		165	
80	ctt ctt aac aat cca ccc ggg cga gtg ttc act ttg gtg ttt cgg ttg	584						
81	Leu Leu Asn Asn Pro Pro Gly Arg Val Phe Thr Leu Val Phe Arg Leu							
82		170		175		180		
84	act tta gga ttt ccg tta tac ctc tta act aat atc tcg ggc aag aaa	632						
85	Thr Leu Gly Phe Pro Leu Tyr Leu Leu Thr Asn Ile Ser Gly Lys Lys							
86		185		190		195		
88	tac ggg agg ttt gcc aac cac ttt gat ccc atg agt cca att ttc aac	680						
89	Tyr Gly Arg Phe Ala Asn His Phe Asp Pro Met Ser Pro Ile Phe Asn							
90		200		205		210		
92	gat cgt gaa cgc gtt caa gtt ttg cta tcc gat ttc ggt ctt ctc gct	728						
93	Asp Arg Glu Arg Val Gln Val Leu Leu Ser Asp Phe Gly Leu Leu Ala							
94		215		220		225		
96	gta ttt tat gca atc aag ctt ctt gta gca gca aaa ggg gca gct tgg	776						
97	Val Phe Tyr Ala Ile Lys Leu Leu Val Ala Ala Lys Gly Ala Ala Trp							
98	230		235		240		245	
100	gta atc aac atg tac gca att cca gta cta ggt gta agc gtg ttc ttc	824						
101	Val Ile Asn Met Tyr Ala Ile Pro Val Leu Gly Val Ser Val Phe Phe							
102		250		255		260		
104	gtt ttg atc aca tat ttg cac cac acc cat ctc tca ctc cct cat tat	872						
105	Val Leu Ile Thr Tyr Leu His His Thr His Leu Ser Leu Pro His Tyr							
106		265		270		275		
108	gat tca acc gaa tgg aac tgg atc aaa ggc gcc tta tca aca atc gat	920						
109	Asp Ser Thr Glu Trp Asn Trp Ile Lys Gly Ala Leu Ser Thr Ile Asp							
110		280		285		290		
112	agg gat ttc ggg ttc ctg aat cgg gtt ttc cac gac gtt aca cac act	968						
113	Arg Asp Phe Gly Phe Leu Asn Arg Val Phe His Asp Val Thr His Thr							
114		295		300		305		
116	cac gtc ttg cat cat ttg atc tca tac att cca cat tat cat gca aag	1016						
117	His Val Leu His His Leu Ile Ser Tyr Ile Pro His Tyr His Ala Lys							
118	310		315		320		325	
120	gaa gca agg gat gca atc aag cca gtg ttg ggc gag tac tat aaa atc	1064						
121	Glu Ala Arg Asp Ala Ile Lys Pro Val Leu Gly Glu Tyr Tyr Lys Ile							
122		330		335		340		
124	gac agg act cca att ttc aaa gca atg tat aga gag gct aag gaa tgc	1112						
125	Asp Arg Thr Pro Ile Phe Lys Ala Met Tyr Arg Glu Ala Lys Glu Cys							
126		345		350		355		

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128 atc tac atc gag ccc gat gag gat agc gag cac aaa ggt gtg ttc tgg      1160
129 Ile Tyr Ile Glu Pro Asp Glu Asp Ser Glu His Lys Gly Val Phe Trp
130          360          365          370
132 tac cac aag atg taa tcaaaaagggt gtatgtcaat gcaattgtat gcttaattaa      1215
133 Tyr His Lys Met
134          375
136 gttgttaaagc tttctattcc gtgtaataaaa ttatcattaa gagaaaaaaaa aaaaaaaaaa      1275
138 aaaaaaaaaa      1285
141 <210> SEQ ID NO: 2
142 <211> LENGTH: 377
143 <212> TYPE: PRT
144 <213> ORGANISM: Calendula officinalis
146 <400> SEQUENCE: 2
147 Met Gly Ala Gly Gly Arg Met Ser Asp Pro Ser Glu Gly Lys Asn Ile
148 1 5 10 15
150 Leu Glu Arg Val Pro Val Asp Pro Pro Phe Thr Leu Ser Asp Leu Lys
151 20 25 30
153 Lys Ala Ile Pro Thr His Cys Phe Glu Arg Ser Val Ile Arg Ser Ser
154 35 40 45
156 Tyr Tyr Val Val His Asp Leu Ile Val Ala Tyr Val Phe Tyr Tyr Leu
157 50 55 60
159 Ala Asn Thr Tyr Ile Pro Leu Ile Pro Thr Pro Leu Ala Tyr Leu Ala
160 65 70 75 80
162 Trp Pro Val Tyr Trp Phe Cys Gln Ala Ser Ile Leu Thr Gly Leu Trp
163 85 90 95
165 Val Ile Gly His Glu Cys Gly His His Ala Phe Ser Asp Tyr Gln Leu
166 100 105 110
168 Ile Asp Asp Ile Val Gly Phe Val Leu His Ser Ala Leu Leu Thr Pro
169 115 120 125
171 Tyr Phe Ser Trp Lys Tyr Ser His Arg Asn His His Ala Asn Thr Asn
172 130 135 140
174 Ser Leu Asp Asn Asp Glu Val Tyr Ile Pro Lys Arg Lys Ser Lys Val
175 145 150 155 160
177 Lys Ile Tyr Ser Lys Leu Leu Asn Asn Pro Pro Gly Arg Val Phe Thr
178 165 170 175
180 Leu Val Phe Arg Leu Thr Leu Gly Phe Pro Leu Tyr Leu Leu Thr Asn
181 180 185 190
183 Ile Ser Gly Lys Lys Tyr Gly Arg Phe Ala Asn His Phe Asp Pro Met
184 195 200 205
186 Ser Pro Ile Phe Asn Asp Arg Glu Arg Val Gln Val Leu Leu Ser Asp
187 210 215 220
189 Phe Gly Leu Leu Ala Val Phe Tyr Ala Ile Lys Leu Leu Val Ala Ala
190 225 230 235 240
192 Lys Gly Ala Ala Trp Val Ile Asn Met Tyr Ala Ile Pro Val Leu Gly
193 245 250 255
195 Val Ser Val Phe Phe Val Leu Ile Thr Tyr Leu His His Thr His Leu
196 260 265 270
198 Ser Leu Pro His Tyr Asp Ser Thr Glu Trp Asn Trp Ile Lys Gly Ala
199 275 280 285

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Input Set : A:\50669.APP

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201 Leu Ser Thr Ile Asp Arg Asp Phe Gly Phe Leu Asn Arg Val Phe His
 202 290 295 300
 204 Asp Val Thr His Thr His Val Leu His His Leu Ile Ser Tyr Ile Pro
 205 305 310 315 320
 207 His Tyr His Ala Lys Glu Ala Arg Asp Ala Ile Lys Pro Val Leu Gly
 208 325 330 335
 210 Glu Tyr Tyr Lys Ile Asp Arg Thr Pro Ile Phe Lys Ala Met Tyr Arg
 211 340 345 350
 213 Glu Ala Lys Glu Cys Ile Tyr Ile Glu Pro Asp Glu Asp Ser Glu His
 214 355 360 365
 216 Lys Gly Val Phe Trp Tyr His Lys Met
 217 370 375

221 <210> SEQ ID NO: 3

222 <211> LENGTH: 29

223 <212> TYPE: DNA

224 <213> ORGANISM: Artificial Sequence

226 <220> FEATURE:

227 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
228 primer

230 <220> FEATURE:

231 <221> NAME/KEY: modified_base

232 <222> LOCATION: (12)

233 <223> OTHER INFORMATION: Inosine

235 <400> SEQUENCE: 3

W--> 236 ccdtattct cntggaarww hagycaycg

29

239 <210> SEQ ID NO: 4

240 <211> LENGTH: 27

241 <212> TYPE: DNA

242 <213> ORGANISM: Artificial Sequence

244 <220> FEATURE:

245 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
246 primer

248 <220> FEATURE:

249 <221> NAME/KEY: modified_base

250 <222> LOCATION: (13)

251 <223> OTHER INFORMATION: Inosine

253 <400> SEQUENCE: 4

W--> 254 ccartyccay tcngwbgart crtartg

27

257 <210> SEQ ID NO: 5

258 <211> LENGTH: 28

259 <212> TYPE: DNA

260 <213> ORGANISM: Artificial Sequence

262 <220> FEATURE:

263 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
264 primer

266 <400> SEQUENCE: 5

267 gtgaggagat gagagatggg tgtggtgc

28

270 <210> SEQ ID NO: 6

271 <211> LENGTH: 28

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Input Set : A:\50669.APP

Output Set: N:\CRF4\10122006\J069772B.raw

272 <212> TYPE: DNA
273 <213> ORGANISM: Artificial Sequence
275 <220> FEATURE:
276 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
277 primer
279 <400> SEQUENCE: 6
280 aacacactta cacctagtagtggaattg 28
283 <210> SEQ ID NO: 7
284 <211> LENGTH: 28
285 <212> TYPE: DNA
286 <213> ORGANISM: Artificial Sequence
288 <220> FEATURE:
289 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
290 primer
292 <400> SEQUENCE: 7
293 tattccaaac ttcttaacaa tccacccg 28
296 <210> SEQ ID NO: 8
297 <211> LENGTH: 28
298 <212> TYPE: DNA
299 <213> ORGANISM: Artificial Sequence
301 <220> FEATURE:
302 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
303 primer
305 <400> SEQUENCE: 8
306 caattccagt actaggtgta agtgtgtt 28
309 <210> SEQ ID NO: 9
310 <211> LENGTH: 34
311 <212> TYPE: DNA
312 <213> ORGANISM: Artificial Sequence
314 <220> FEATURE:
315 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
316 primer
318 <400> SEQUENCE: 9
319 attagagctc atgggtgctg gtgggtcggat gtcg 34
322 <210> SEQ ID NO: 10
323 <211> LENGTH: 38
324 <212> TYPE: DNA
325 <213> ORGANISM: Artificial Sequence
327 <220> FEATURE:
328 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
329 primer
331 <400> SEQUENCE: 10
332 attactcgag tgacatacac ctttttgatt acatcttg 38
335 <210> SEQ ID NO: 11
336 <211> LENGTH: 18
337 <212> TYPE: DNA
338 <213> ORGANISM: Artificial Sequence
340 <220> FEATURE:
341 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/069,772B

DATE: 10/12/2006
TIME: 14:51:04

FJI

Input Set : A:\50669.APP
Output Set: N:\CRF4\10122006\J069772B.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; N Pos. 12
Seq#:4; N Pos. 13
Seq#:18; Xaa Pos. 7
Seq#:19; Xaa Pos. 5,8

VERIFICATION SUMMARY

PATENT APPLICATION: **US/10/069,772B**

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Input Set : **A:\50669.APP**

Output Set: **N:\CRF4\10122006\J069772B.raw**

L:236 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:254 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:639 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0
L:663 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:0